SW RGBHV Series
RGBHV and Stereo Audio Switchers

SERIES FEATURES

- **Inputs: Two, four, and six input analog RGBHV models with or without stereo audio;** video on BNC connectors; audio on captive screw connectors

- **Output: One set of female BNC connectors for video; one captive screw connector for audio**

- **350 MHz (-3 dB) RGB video bandwidth**

- **Compatible with RGBHV, RGBS, RGsB, RsGsBs, HDTV, component video, S-video, and composite video**

- **Auto-input switching** — Automatically switches to the highest-numbered input with an active video signal.

- **Automatically detects which inputs have an active signal and reports this information through the RS-232 port**

- **RS-232 and contact closure remote control**

- **Audio input gain and attenuation**
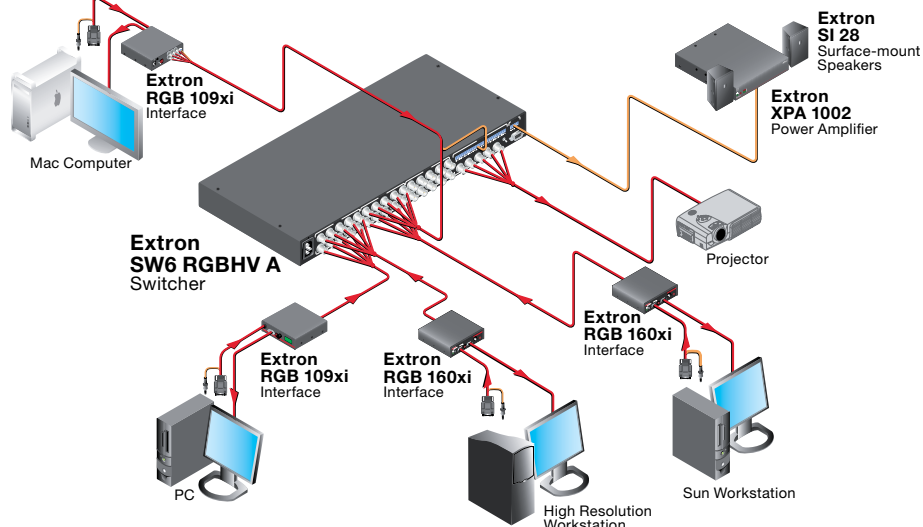
- **Internal universal power supply**

DESCRIPTION

The Extron **SW RGBHV Series** are active analog RGBHV switchers using BNC connectors. There are six switchers in the series. The **SW2 RGBHV**, **SW4 RGBHV**, and **SW6 RGBHV** are two, four, and six input, one output RGBHV video-only switchers, respectively. The **SW2 RGBHV A**, **SW4 RGBHV A** and **SW6 RGBHV A** are two, four, and six input, one output RGBHV switchers with audio.

All models allow multiple RGBHV, RGBS, RGsB, RsGsBs, RGB video sources to be switched to one compatible display device. With 350 MHz (-3 dB) RGB video bandwidth, the SW RGBHV A Series switchers can support a wide array of high resolution signals.

The SW RGBHV A Series include captive screw audio connectors for balanced and unbalanced stereo audio sources. They also include adjustable gain and attenuation, allowing users to set the individual input audio levels, providing no significant difference in volume when switching between sources. All of the switchers can be controlled via the front panel buttons or through a 9-pin remote control port. The 9-pin female D connector enables RS-232 control, as well as contact closure control. They are also compatible with the Extron KP 6 Keypad Remote Control and the Extron IR 102 Kit IR remote.

Each switcher is user-configurable for manual or auto-input switching modes. The auto-input switch function can be enabled or disabled via a toggle switch on the back panel. Auto-input switching allows any input of the switcher to be selected automatically when the switcher detects a sync signal. Two input models are half rack width, 1U metal enclosures that fit into an optional Extron 1U Universal Rack Shelf Kit. Four and six input models are 1U, full rack width and ship with rack ears.

Extron ®

SW RGBHV Series

SW2 RGBHV
Two Input Analog RGBHV Switcher

UNIQUE FEATURES

- 1U, half rack width enclosure

MODEL	VERSION DESCRIPTION	PART #
SW2 RGBHV	Two Input RGBHV	60-491-01

SW4 RGBHV
Four Input Analog RGBHV Switcher

UNIQUE FEATURES

- 1U, full rack width enclosure
- Rack mount brackets included

MODEL	VERSION DESCRIPTION	PART #
SW4 RGBHV	Four Input RGBHV	60-492-01

SW6 RGBHV
Six Input Analog RGBHV Switcher

UNIQUE FEATURES

- 1U, full rack width enclosure
- Rack mount brackets included

MODEL	VERSION DESCRIPTION	PART #
SW6 RGBHV	Six Input RGBHV	60-493-01

Extron®

SW RGBHV Series

SW2 RGBHV A
Two Input Analog RGBHV and Stereo Audio Switcher

UNIQUE FEATURES

- Switches RGBHV video and stereo audio on BNC and captive screw connectors

- Audio input gain and attenuation

- 1U, half rack width enclosure

MODEL	VERSION DESCRIPTION	PART #
SW2 RGBHV A	Two Input RGBHV & Audio	60-491-21

SW4 RGBHV A
Four Input Analog RGBHV and Stereo Audio Switcher

UNIQUE FEATURES

- Switches RGBHV video and stereo audio on BNC and captive screw connectors

- Audio input gain and attenuation

- 1U, full rack width enclosure

- Rack mount brackets included

MODEL	VERSION DESCRIPTION	PART #
SW4 RGBHV A	Four Input RGBHV & Audio	60-492-21

SW6 RGBHV A
Six Input Analog RGBHV and Stereo Audio Switcher

UNIQUE FEATURES

- Switches RGBHV video and stereo audio on BNC and captive screw connectors

- Audio input gain and attenuation

- 1U, full rack width enclosure

- Rack mount brackets included

MODEL	VERSION DESCRIPTION	PART #
SW6 RGBHV A	Six Input RGBHV & Audio	60-493-21

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SW RGBHV Series

SW RGBHV Series Accessories

INCLUDED ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
For SW4 and SW6 models only			
MBD 149	1U, Full Rack Width, Rack Mount and Through-Desk Kit for Four-Piece Enclosure .. page 856		70-077-03

OPTIONAL ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
RSU 129	1U 9.5" Deep Universal Rack Shelf Kit .... page 858		60-190-01
MBU 125	1U, 1/2 & 1/4 Rack Width, Under-Desk Mount Kit for Two-Piece Enclosure..... page 854		70-077-01
CCR 204	Four-Button Contact Closure Remote... page 286		60-794-02
CCR 306	Six-Button Contact Closure Remote .... page 287		60-795-02
KP 6	Keypad Remote Control For Use With 9-pin Contact Closure Port............... page 288		60-111-20
IR 102 Remote Control Kit	IR to RS-232 or Contact Closure Conversion Kit................................. page 280		70-224-01
RCAF-BNCM/10	RCA Female to BNC Male Adapter - Qty. 10 .... page 829		100-229-01
CSR 6	Captive Screw to RCA Female Audio Adapter .... page 834		26-575-01

SPECIFICATIONS

VIDEO

Gain	Unity.
Bandwidth	350 MHz (-3 dB)
Crosstalk..................................	-70dB @ 10 MHz
Switching speed	5 ms (max.)

VIDEO INPUT

Number/signal type

SW2 RGBHV/RGBHV A	2 RGBHV, RGBS, RGsB, RsGsBs, HDTV component video, S-video, composite video (or digital audio)
SW4 RGBHV/RGBHV A	4 RGBHV, RGBS, RGsB, RsGsBs, HDTV component video, S-video, composite video (or digital audio)
SW6 RGBHV/RGBHV A	6 RGBHV, RGBS, RGsB, RsGsBs, HDTV component video, S-video, composite video (or digital audio)

Connectors

SW2 RGBHV/RGBHV A	2 x 5 female BNC
SW4 RGBHV/RGBHV A	4 x 5 female BNC
SW6 RGBHV/RGBHV A	6 x 5 female BNC
Nominal level..........................	1.0 Vp-p for Y of component video and S-video, and for composite video
	0.7 Vp-p for RGB and for R-Y and B-Y of component video
	0.3 Vp-p for C of S-video
Minimum/maximum levels	Analog: 0.3 V to 1.5 Vp-p with no offset
Impedance...............................	75 ohms
Return loss	<-30 dB @ 10 MHz
DC offset (max. allowable)......	5.0V
Input coupling.........................	DC

VIDEO OUTPUT

Number/signal type	1 RGBHV, RGBS, RGsB, RsGsBs, HDTV component video, S-video, composite video (or digital audio)
Connectors...............................	5 BNC female
Nominal level..........................	1.0 Vp-p for Y of component video and S-video, and for composite video
	0.7 Vp-p for RGB and for R-Y and B-Y of component video
	0.3 Vp-p for C of S-video
Minimum/maximum levels	0.5 V to 1.5 Vp-p (follows input)
Impedance...............................	75 ohms
Return loss	<-30 dB @ 10 MHz
DC offset.................................	±5 mV maximum with input at 0 offset

SYNC

Input type................................	RGBHV, RGBS, RGsB, RsGsBs, bi-level and tri-level sync
Output type	RGBHV, RGBS, RGsB, RsGsBs, bi-level and tri-level sync
Input level..............................	Analog or TTL, 0.5 V to 5.0 Vp-p
Output level	5.0 Vp-p, unterminated, for V output; H output follows input
Input impedance.....................	510 ohms for V input and unselected H input; the selected H input impedance is determined by the device connected to the H output.
Output impedance	75 ohms for V output; the H output impedance is determined by the device connected to the selected H input.
Max. input voltage	5.0 Vp-p
Max. propagation delay	35 ns
Max. rise/fall time..................	4 ns
Polarity...................................	Positive or negative (follows input)

AUDIO — SW 2/4/6 RGBHV A ONLY

Gain	-18 to +24 dB, adjustable
	When audio gain is set to unity (0 dB), balanced output will have a 0 dB gain; unbalanced output will be attenuated by 6 dB.
Frequency response	20 Hz to 20 kHz, ±0.05 dB
THD + Noise...........................	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N...	>90 dB at maximum output
Crosstalk................................	<-65 dB @ 20 kHz, <-80 dB @ 1 kHz or below 60 Hz
Stereo channel separation......	>80 dB @ 20 Hz to 20 kHz
CMRR.....................................	>75 dB @ 20 Hz to 20 kHz

DIGITAL AUDIO — ALL MODELS' H CHANNEL

Input type...............................	Dolby Digital, DTS, AES/EBU
Output type	Dolby Digital, DTS, AES/EBU
Bandwidth	250 MHz (-3 dB)

Sampling rates	32, 44.1, 48, 96 kHz
Input level	0.5 V to 5.0 Vp-p
Output level	2.5 Vp-p (when terminated with 75 ohms)
Input impedance.....................	510 ohms for unselected inputs; for the selected input, impedance is determined by the device connected to the output
Output impedance	Determined by the device connected to the selected input
Max. input voltage	5.0 Vp-p
Max. propagation delay	35 ns
Max. rise/fall time..................	4 ns

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBU ≈ 2 dBu

AUDIO INPUT — SW 2/4/6 RGBHV A ONLY

Number/signal type	2, 4, or 6 (depending on the model) stereo, balanced/unbalanced
Connectors.............................	2, 4, or 6 (depending on the model) 3.5 mm captive screw connectors, 5 pole
Impedance..............................	>10k ohms unbalanced, 20k ohms balanced, DC coupled
Nominal level.........................	-20 dBV (100 mVrms), -10 dBV (316 mVrms), 0 dBu (0.775 Vrms), or +4 dBu (1.23 Vrms), configurable
Maximum level	+20 dBu, (balanced or unbalanced) at 1% THD+N
Input gain adjustment............	-24 dB to +18 dB, adjustable per input
Input coupling........................	DC

AUDIO OUTPUT — SW 2/4/6 RGBHV A ONLY

Number/signal type	1 stereo, balanced/unbalanced
Connectors.............................	(1) 3.5 mm captive screw connector, 5 pole
Impedance..............................	50 ohms unbalanced, 50 ohms balanced
Nominal level.........................	-10 dBV (316 mV) or +4 dBu (1.23 V), configurable
Maximum level (Hi-Z)	>26 dBu, balanced; >+20 dBu, unbalanced at 1% THD+N
Maximum level (600 ohm)	>+21 dBm, balanced; >+15 dBm, unbalanced at 1% THD+N

CONTROL/REMOTE — SWITCHER

Serial control port..................	RS-232, 9-pin female D connector (same as the contact closure port)
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations	
	2 = TX, 3 = RX, 5 = GND
Contact closure......................	9-pin female D connector (same as the RS-232 port)
Contact closure pin configurations	
	1 = input #1, 4 = input #2, 6 = input #3, 7 = input #4, 8 = input #5, 9 = input #6
Program control......................	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™)

GENERAL

Power......................................	100 VAC to 240 VAC, 50/60 Hz, 20 watts, internal
Cooling...................................	Convection, unvented
Rack mount	
SW2 RGBHV, SW2 RGBHV A	
	Yes, with optional 1U, 9.5" deep rack shelf, part #60-190-01 (RSU 129) or 60-604-01 (RSB 129)
All other models......................	Yes, with included mounting kit, part #70-077-03 (MBD 149)
Enclosure type	Metal
Enclosure dimensions	
SW2 RGBHV, SW2 RGBHV A	1.75" H x 8.75" W x 9.5" D (1U high, half rack wide)
	4.4 cm H x 22.2 cm W x 24.1 cm D
	(Depth excludes connectors.)
All other models......................	1.75" H x 17.5" W x 8.5" D (1U high, full rack wide)
	4.4 cm H x 44.5 cm W x 21.6 cm D
	(Depth excludes connectors.)
Product weight	
SW2 RGBHV	2.4 lbs (1.1 kg)
SW2 RGBHV A	2.5 lbs (1.1 kg)
All other models.....................	7.0 lbs (3.2 kg)
Shipping weight	
SW2 RGBHV, SW2 RGBHV A	5 lbs (3kg)
All other models......................	12 lbs (6 kg)

Note: For complete specifications, please go to www.extron.com

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